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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------|-------------|----------------------|---------------------|------------------|
| 10/598,524 | 09/01/2006 | Katsuya Fukase | NGB-16837 | 6872 |
| 40854 | 7590 | 10/07/2008 | | |
| RANKIN, HILL, & CLARK LLP | | | EXAMINER | |
| 38210 Glenn Avenue | | | NORRIS, JEREMY C | |
| WILLOUGHBY, OH 44094-7808 | | | ART UNIT | PAPER NUMBER |
| | | | 2841 | |
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| | | | 10/07/2008 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/598,524

Applicant(s)

FUKASE ET AL.

Examiner

Jeremy C. Norris

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
4a) Of the above claim(s) 1-11 and 16-29 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 12-15, 30 and 31 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 17 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date 09/06
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Election/Restrictions

Applicant's election without traverse of Group II, claims 12-15, 30, and 31 in the reply filed on 7 July 2008 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12-15, 30, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,281,436 B1 (Gotoh).

Gotoh discloses, referring primarily to figures 2 and 3, a circuit board in which a circuit portion is formed on an insulating substrate by a conductive layer (10) and there provided a through hole (20) having an internal wall covered or filled with the conductive layer, wherein a land of the through hole is formed continuously like a concentric circle with respect to the hole, a maximum height of the conductive layer in a non-coupling portion of the land is equal to or greater than 5µm (col. 6, lines 25-45) with a corner portion of the insulating substrate set to be a reference point and is equal to or smaller

than a thickness of the conductive layer in a circuit portion, and a land width from the reference point is 0 to 40 μ m (col. 6, lines 25-45) [claim 12], wherein a difference between maximum and minimum values of the land width is equal to or smaller than 8 μ m (width is constant, thus the difference = 0 μ m) [claims 13, 30], wherein a sectional shape of the conductive layer in the circuit portion is different from that of the conductive layer in the land portion (figures 2 and 3) [claim 14], wherein a portion having a maximum height is present within a range from the internal wall of the hole to a thickness of the conductive layer in the hole in the conductive layer of the land (figure 2) [claims 15, 31].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents disclose through holes in printed wiring boards:

US 7,301,103 B2 Tanaka et al.,

US 7,164,085 B2 Saiki,

US 6,534,723 B1 Asai et al..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is (571)272-1932. The examiner can normally be reached on Monday - Thursday, 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on 571-272-1984. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeremy C. Norris
Primary Examiner
Art Unit 2841

/Jeremy C. Norris/
Primary Examiner, Art Unit 2841